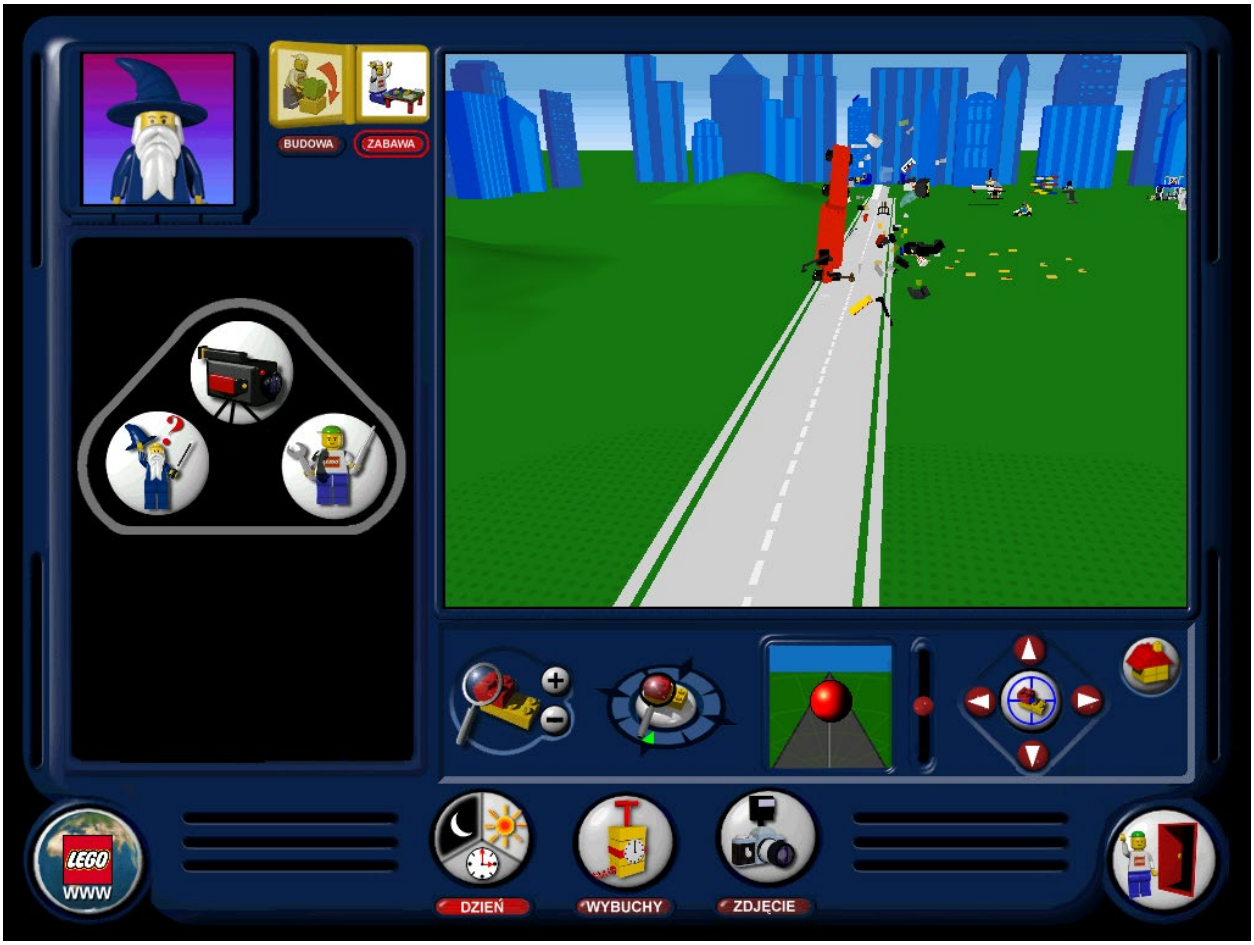
Inside one of the most important LEGO® games ever made

One of the LEGO Group's first ideas for a video game turned out to be its most enduring.

LEGO Creator was envisioned as the kickoff to a series of titles that would recreate the experience of playing with physical LEGO bricks, but in a digital world without real-world constraints like cost and storage.

Despite being a '90s blue sky idea, what LEGO Creator would become managed to overshadow even those grand plans.

Today, LEGO Digital Designer – the modern incarnation of LEGO Creator – is used to help make LEGO movies, video games, and even to design toys. It's also used by fans to empower their real-world building and augment fan-created games.



It all started back in 1996 when LEGO Media International was just establishing itself. Rob Smith, an executive producer at LMI in London, said he was working with a team that was trying to come up with some video game concepts that would form the pillars of the LEGO Group's efforts in gaming.

The idea for LEGO Creator, he said, bubbled up during a brainstorming session. It was inspired in part by the LEGO Group's Strategic Product Unit Darwin's early work to digitize the LEGO brick.

"LEGO Creator was designed to be sort of the quintessential game that would represent the LEGO Group in a virtual interactive environment," Smith said. "It was supposed to take the idea of play materials and allow children to build them in a PC environment that would allow them to deconstruct, as well as construct, and also play. So, it was to mirror what the play materials did in real life, but actually utilize the technology of the day in interesting and unique ways that couldn't happen in the real world.

"That's why we thought the LEGO Group would be interested in doing this. It bridged the two worlds of physical play materials and the interactive space of video games beautifully well."

The team at LMI brought in British developer Superscape to turn this idea into a video game, and the group set to work creating this digital embodiment of the LEGO brick experience.

LEGO Creator launched on Nov. 11, 1998 as a sort of LEGO set simulator, allowing players to build inside a virtual LEGO environment, clicking bricks together to create whatever their imagination could conceive – or at least approaching that.

The ambition for LEGO Creator went beyond a single game. Smith said the plan was to create future games based on different LEGO theme sets.

While that came to fruition to some degree, Smith wasn't around at LEGO Media International to see it happen. He left LMI in 1999. But the game continued to chug along without him.

In 2000, LEGO Creator: Knights' Kingdom was released. As its name implies, the game focused on building a medieval kingdom and acting out battles.

Then 2001 saw the release of LEGO Creator: Harry Potter™, delivering the popular Wizarding World to the blossoming LEGO Creator series. This third iteration of the franchise was also the first ever LEGO video game based on a licensed property. It also marked the last time developer Superscape would work on the franchise.

By the time LEGO Creator: Harry Potter rolled out, the LEGO Group was reexamining its video game business, and in this case, the look and feel of its popular line of LEGO Creator games.

Qube Software CEO Servan Keondjian said the LEGO Group approached his company looking for better technology, specifically better graphics for the Creator games. They asked Qube to look at the titles to get their input.

Ultimately, the LEGO Group decided to bring on Qube and have them start from scratch when developing the next game, Creator: Harry Potter and the Chamber of Secrets™. But there was an unusual challenge. While Qube was being asked to create this title based on the Chamber of Secrets, Electronic Arts – which was the game's publisher – was also working on its own Chamber of Secrets game. So they didn't want this one to lean too heavily into the plot and gameplay of the movie and book. Instead, Keondjian said, they wanted something that was a bit more focused on the sandbox building.

As Qube walked the fine line between too much and not enough gameplay, they were in deep talks with the LEGO Group about the building side of the game and the engineering going into recreating that experience.

Qube managed to nail the game and get Creator: Harry Potter and the Chamber of Secrets out the door in 2002. It marked the last LEGO Creator title ever released, but not because it wasn't well received. If anything, it was because it was too good at recreating the experience of building with LEGO bricks in a digital setting.

While Qube was diligently working away on the last LEGO Creator game, there was movement afoot inside the LEGO Group to take the technology powering that game and turn it into something much more important to the core of the LEGO Group, a tool that could be used by fans and employees alike, a creation that would harken back to the days of SPU Darwin and that initial idea of turning the full LEGO brick library into digital form for all to use however they wanted.

Keondjian said what would eventually become LEGO Digital Designer started its life as an idea within the LEGO Group and the skilled handiwork of Qube on Creator: Harry Potter and the Chamber of Secrets.

"It was a sort of skunkworks within the LEGO Group," Keondjian said. "Certain people in management at the LEGO Group knew that we had the potential to build a really good building tool, and they believed in us.

"I was very keen to build a pure prototype for LEGO Digital Designer, which at that time we called Lego Arena."

The LEGO Group's Ronny Scherer said that the company looked at a number of ideas bringing this concept to life. Among those: going to Qube to see if they could essentially extract the building component of the game they just created and use that to create a powerful tool.

"They earned a lot of trust very quickly for me personally, because they seem to have the grasp on the things that we thought were important, in terms of executing a building

experience in 3D," Scherer said. "I remember that team just sort of showed some really impressive demos and a path forward."

Because Project Arena was built on the bones of the latest Creator game, it didn't take long to build that first working prototype, envisioned as something that would turn into a tool not just for crafting LEGO brick creations, but LEGO video games.

The original version of LEGO Digital Designer hit in 2004. Shortly thereafter, the LEGO Group rolled out support that allowed people using LDD to order physical versions of their models under the LEGO Factory and LEGO Design byMe programs.

A few years after releasing LEGO Digital Designer, Qube pitched the idea of turning the LDD tool back into a LEGO video game.

Not only did the LEGO Group pass on the idea, but it also decided to take LDD back from Qube and continue its development internally.

Keondjian said he thinks the decision was fueled by a desire to have total control over a project that was becoming an important part of the company's core efforts in the realm of digital creations.

For the third time in its history, the sandbox creator software was scrapped, and the new team – once more an internal team at the LEGO Group – started from scratch, completely rebuilding LEGO Digital Designer.

Since its creation, LEGO Digital Designer has branched off in many interesting directions. Of course, there was the ability to create a digital model and then have a physical version shipped to you. But shortly after its release, LDD was being used by the LEGO Group's own designers to sketch out ideas made of LEGO bricks. Game developers used the tool to help with their design work and creation pipeline. A version of the software was given to the team behind The LEGO Movie™, which used it to rough out their LEGO brick builds. And fans continue to use it to create their own real-world models and video games.

From its inception back in 1996 to today, LEGO Creator remains one of the longest lived, most important games in the LEGO Group's more than 25-year history in video games.

"There's an immense amount of pride, not just in the end product, but also working with an incredible team of developers, non-traditional game developers that created something that actually had much longer legs than the many, many games around that time, or even nowadays – a huge amount of pride," Smith said. "I think it surpassed the quality bar and our expectations."

Explore more ...

In order of appearance:

LEGO Creator – Wikipedia

LEGO Creator: Knights' Kingdom – Wikipedia

LEGO Creator: Harry Potter – Wikipedia

Creator: Harry Potter and the Chamber of Secrets – Wikipedia

Harry Potter and the Chamber of Secrets – Wikipedia

LEGO Digital Designer – Official site

Qube Software – Wikipedia

Superscape – Wikipedia

Transcript

Bits N' Bricks Season 4, Episode 43: The LEGO® Game That Unlocked True Digital Creation

Dec. 8, 2021 • 44:21

Prologue – 00:00

Announcer

Please note that this episode of Bits N' Bricks contains instances of misuse of the LEGO trademark, which must always be used as an adjective and never a noun. As a reminder, it is never appropriate to refer to the company that designs and produces LEGO brand products as LEGO. Rather, the correct name for the company overall is the LEGO Group.

Announcer

I hope that was severe enough. Was it severe enough?

Studio Engineer

Yeah, that was great, Ben. We got it.

Announcer

Alright. On with the show.

(Child's voice announcing Bits N' Bricks)

Bits N' Bricks: Introduction – 00:39

Ethan Vincent

Welcome to Bits N' Bricks, a podcast about all things LEGO games. I'm Ethan Vincent.

Brian Crecente

And I'm Brian Crecente. Together, we look back at the rich 25-year history of LEGO games, chat with early developers and seasoned studios, who have all tackled the creation of video games for one of the most popular and respected toy companies in the world – the LEGO Group.

(Bits N' Bricks Season 4 theme music)

Brian Crecente

Ethan, remember when we started going down this road back when we started looking at the long history of LEGO video games?

Ethan Vincent

Yeah, it's been two years or so now, but I still remember.

Brian Crecente

I think one of my favorite discoveries, and I'm saying discoveries in quotes because it was known I think, but this idea that I personally stumbled across when I first heard of SPU Darwin.

Ethan Vincent

Yes, Strategic Product Unit Darwin, of course, yeah. What a crazy story. We covered that extensively in an earlier episode of the show, and how it sort of kick started the LEGO Group's very early interest in the digital world.

Brian Crecente

Yeah, and I love that you always remember that it's Strategic Product Unit Darwin and not special product unit Darwin. I, for some reason, can never keep that straight. You know, one of the things we talked about, all those episodes ago, was about how SPU Darwin was sort of dying, and near the end of its lifespan another group within the company was getting started, which was LEGO Media International.

Ethan Vincent

LEGO Media International, or LMI, was the arm of the LEGO Group that was among other things, you know, focused on creating video games. They lent a hand with LEGO Island, but really it was what would come next that they helped shape and which helped shape them, and chief among its titles was one that still lives on in a new form today – the sandbox building game LEGO Creator.

Chapter 1: LEGO Media International – 02:38

Brian Crecente

LEGO Media International was established in 1996, with a headquarters near London, England. Shortly after its formation, the group got to work on laying out the foundation for what it saw as its unique approach to bringing the fun and creativity of LEGO bricks to video games. LMI pushed out six games in 1998 and 1999, each exploring a different facet of video games and LEGO bricks. 1998 saw the release of LEGO Loco, LEGO Chess, and LEGO Creator. And '99 saw the release of LEGO Friends, LEGO Racers, and LEGO Rock Raiders.

Rob Smith was an executive producer at LMI at the time. He worked on a couple of titles from that early era, including LEGO Loco, 2000's LEGOLAND, and of course, LEGO Creator.

Rob Smith

So, when LEGO Media International was formed, we had a fairly major brainstorming sessions workout what the launch lineup of titles should look like. And we didn't really want to surprise anyone, particularly on the board at the LEGO Group, nor the consumers that were buying the game, so we went for some interesting genres. So we looked at things like LEGO Chess, for example. We looked at some some racing title, LEGO Racers, but LEGO Creator and LEGO Loco and LEGOLAND was some of the things that we wanted to try to push a few interesting ideas out there, LEGO Creator in particular was sort of the main idea as a pillar for the business. LEGO Loco and LEGOLAND were really there to introduce LEGO Media International to the world, the video games arm of the LEGO Group. And it was just to say, "Hi, we're here, and we represent the LEGO Group, but we also want to do something that is relevant for families with children."

(Excerpt from LEGO Creator PC Video Game: "Happy building.")

Rob Smith

So LEGO Creator was designed to be sort of the quintessential game that would represent the LEGO Group in a virtual, interactive environment. It was supposed to take the idea of play materials and allow children to build them in a PC environment that would allow them to deconstruct, as well as construct, and also play, so as to mirror what the play materials did in real life, but actually utilize the technology of the day in interesting and unique ways that couldn't happen in the real world. So for example, deconstructing LEGO play materials and rebuilding them often was seen as time consuming – maybe a problem for certain younger children, they'd invest a lot of time – but with a virtual environment, you can rebuild instantly. So you never really lost the hours of time building the LEGO bricks, but you could also play with them in a very different way. You know, for example, taking a first-person viewpoint from a LEGO minifigure driving around, flying around in the environment, doing something that you could never really replicate in the real world. That's what the technology of the day allowed us to do. And that's why we thought the LEGO Group would be interested in doing this. It bridged the two worlds of physical play materials and the interactive space of video games beautifully well.

(LMI Logo Sound Effect)

Rob Smith

I think the important thing at the time was the LEGO Group has a very long and successful history, LEGO Media International was a new division within the LEGO Group, and we had a lot to prove. We had to make sure that we came out with some high-quality titles, again, that met expectations from the board at the LEGO Group. Not just them, but also end-

consumers, particularly the children that were playing the games, but also ourselves as industry professionals. We had to make sure that we released a slate of games that represented the diversity of the kind of content that we wanted to produce, which is why you have more traditional things like LEGO Chess, which are, again recognized, understood by parents – then again, there's the aspirational value of something like chess, the parents would love their children to learn to play that game – but also there are slightly more frivolous and fun games out there, let's say LEGO Racers or LEGO Loco, but foundationally speaking, LEGO Creator was important because it really replicated what the LEGO Group represented, I think, what the LEGO brand represented to consumers globally.

Ethan Vincent

Rob says the idea for LEGO Creator bubbled up during an early brainstorming session at LMI and was, he said, primarily his idea, though, it was inspired by some of the work being done by the SPU Darwin team.

Rob Smith

Yes, we'd actually been to Billund for, actually many times, and we' met with the Darwin team and we'd evaluated the incredible R&D they'd been doing and the amazing technology they'd use was Silicon Graphics, it was extremely high-end. They'd work through many, many different levels of detail for a brick archive that the LEGO Group would be using at some point in the future. Yeah, so we evaluated the work that the Darwin team had done in Billund for use in LEGO Creator, unfortunately, the file formats that they had created and utilized, were incompatible with the engine that Superscape were going to be using for LEGO Creator. So we had to use the team of artists, the 3D artists at Superscape, build the LEGO brick assets for LEGO Creator. So it is unfortunate that we couldn't utilize the Darwin work, it was incredible. The level of detail was quite magnificent, but unfortunately not compatible with our engine. I worked this through with the development director, a wonderful guy called Laurence Scotford, and we decided this was actually one of the core pillars that we wanted our business to represent. So Laurence actually had some feelers out across the industry and he found Superscape, which were actually relatively local to us – we were based in London at the time – they were relatively local to us in the U.K. We went to Superscape. We pitched the idea to them. I think they were blown away by the idea that the LEGO Group would come visiting. They're a relatively small – I wouldn't describe them as the traditional game developer, but the technology they have, their VR, HTML-based VR technology was incredible. And it really, from a technical perspective, it kind of met the expectations that we had for LEGO Creator.

(Tune break)

Chapter 2: LEGO Creator and Superscape – 08:55

Brian Crecente

Superscape was a British developer formed in 1993. While it was an established game maker, Rob said what really attracted him and LEGO Media International to the studio, was its excellent work on 3D art and rendering.

Rob Smith

The 3D artists at Superscape were particularly good. I mean, they were able to build, given their experience in building 3D virtual worlds, they got into a cadence, got into nice routine of being able to quickly build the right level of detail – assets – for the title, so it was relatively quick, once that process had been broken through by their project management team to hit the the deadlines that we had set them.

Ethan Vincent

The team at Superscape dove into the work at hand creating an entire LEGO brick database from scratch in a game engine that could run what would become LEGO Creator. The first step though was creating a vertical slice of the game, something that executives at the LEGO Group could play to get a sense of what the completed game would be.

Rob Smith

I remember the MD at the time was was blown away by how fully rounded it was. It was functional, it worked, you could build and play with LEGO bricks, it was quite exceptional, actually, as a vertical slice. But I do remember them presenting that, I think Kjeld Kirk Kristiansen came over to visit London, to our offices. We presented the launch lineup of titles for that year, including LEGO Creator, and he was impressed. And I remember speaking to some of our Danish colleagues who were present at the meeting who obviously knew him far better than we did, and they actually said he was deeply impressed with what he saw. And that was the really the seal of approval. So, to have us individually sign off that from a development perspective is one thing. To have that signed off by the owner of the LEGO Group and give the stamp of approval, that was exceptional.

Brian Crecente

With that approval looming large in their memories, the group set to work creating this digital embodiment of the LEGO brick experience. Rob said that chief among the issues they had to solve was creating a 3D interface that was complex enough to allow someone to move around and build with digital LEGO bricks, but simple enough for a child to have fun with it.

Rob Smith

The (chuckles) the 3D interface was one of the biggest issues that we had to address, and if you break down what LEGO Creator represented, it's actually a huge task. You're asking younger children, maybe 6-, 7-, 8-year-old children to work using mouse, and sometimes mouse and keyboard in a 3D space on a screen. That's actually quite challenging. So we went through multiple iterations with the interface to try to get the core controls as accessible and as simple to use as possible. And we spent an enormous amount of time actually trying to make that front end work as seamlessly as possible, you know, removing whatever barriers we could for children to really make the most of the multiple features that the team are able to incorporate into the game. We worked with a great artist called Guy Sunderland. He's a fabulous UI designer. He came onto the project, midway through – I think, you know, we collectively were struggling to find the right sort of front end, right front end design – Guy came in, came in with some fresh ideas, great collaboration between us, Guy, Superscape. And we were able to turn around the interface that actually you would have seen in the game that was released. So, is it perfect? No, of course not. It's a very, very complicated thing to do. But given Superscape's background in 3D virtual environments, plus the, you know, the creativity that Guy brought to the project, as well as some very thoughtful ideas on how to make things as accessible as possible, and then the brand side of it from the LEGO Group as well. So we had a lot of people from the LEGO Group look at the game, both internally at LMI, as well as externally within the LEGO Group itself. Plus, we had extensive focus-testing sessions as well with, you know, 7-, 8-, 9-, 10-year-old children, to really understand the complexities that we need to address within that UI design. So that was a very long, challenging process. I think we did the best we could. And I think given the timeframe, it would have been quite hard to have bettered what we did at the time.

(Tune break)

Ethan Vincent

LEGO Creator launched on November 11, 1998 as a sort of LEGO set simulator, allowing players to build inside a virtual LEGO environment, clicking bricks together to create whatever their imagination could conceive, or at least approaching that. It won a number of awards the year it hit and was generally well received. But it was never meant to be a single game, released and forgotten. Rob and the rest of the team had grand ambitions for the title.

Rob Smith

Yeah, I think the long term ambition was very high. I have very high expectations for our business, for the teams that we're working with. There are many areas that we looked into. I mean the obvious ones would be associating future titles with new LEGO themes that were coming out in later years, you know, think of those as major releases' sequels. The other idea that we were sort of mulling around for a while was the idea of having physical

play materials include a CD-ROM that would actually include the virtual versions of those bricks, so you would buy a LEGO set from a shop, you would go home, you'd have the CD-ROM, and then you could actually install the same set in a virtual environment and play with it. So you would have that kind of synergy between the play materials and the virtual environment. But we also explored other things, and I love the idea of, and again, this is obvious now, but back in 1996, 7, and 8, this didn't exist, but the idea of using the internet, online sales and add-on content, being able to digitally distribute content to end-consumers, that was something that was very, very interesting. I loved the idea of being able to allow consumers to immediately access something from a pocket money price perspective, very quickly on the internet, purchase something, download it, integrate into LEGO Creator, and then build, and then play within minutes of downloading the content. Because file sizes were relatively small, you'd be very capable of downloading and then playing with something within minutes. And that was, that was one of the big dreams. I think we were way ahead of our time with that idea. But ultimately, the traditional model of having a sequel that came out every year, every 18 months, was very much something that we could and were going to do, but also aligning with new themes that the LEGO Group was going to be producing was also the other obvious thing that we should have been doing.

(Tune break)

Ethan Vincent

While that came to fruition to some degree, Rob wasn't around at LEGO Media International to see it happen. He left LMI in 1999, but the game continued to chug along without him. In 2000, LEGO Creator: Knights' Kingdom hit. As its name would imply, this game focused on building a medieval kingdom and then doing battle. Then 2001 saw the release of LEGO Creator: Harry Potter™, delivering the popular Wizarding universe to the blossoming LEGO Creator series. This third iteration of the LEGO Creator series was also the first ever LEGO video game based on a licensed property. In addition, it marked the last time developer Superscape would work on the franchise.

Chapter 3: LEGO Creator and Qube – 16:35

Brian Crecente

By the time 2001's LEGO Creator: Harry Potter rolled out the LEGO Group was reexamining its video game business, and in this case, the look and feel of its popular line of LEGO Creator games. Qube Software CEO Servan Keondjian said the LEGO Group approached his company looking for better technology – specifically better graphics – for the Creator games. They asked Qube to take a look at the titles to get their input.

Servan Keondjian

What we felt both rendering could be improved and the build technology could be improved. Primarily what got us excited was the build technology. We really wanted to be able to do much richer simulations, and we had a bunch of our own physics simulations within the company at that time that we had developed ourselves, and that's what got them impressed. They saw what we were doing, and we were able to quite quickly put together some basic simulations that showed some quite impressive stuff.

Ethan Vincent

Ultimately, the LEGO Group decided to bring on Qube and have them start from scratch developing the next game – Creator: Harry Potter and the Chamber of Secrets™. But there was an unusual challenge. While Qube was being asked to create this title based on the Chamber of Secrets, Electronic Arts, which was the game's publisher, was also working on its own Chamber of Secrets game, so they didn't want this one to lean too heavily into the plot and gameplay of the movie and book. Instead, Servan says, they wanted something that was a bit more focused on the sandbox building.

Servan Keondjian

Well, it was tricky, because it was quite hard to define. It was down to the contracts that were in place between the companies. Creator: Chamber of Secrets had to be different from the game Chamber of Secrets. So we had to keep the gameplay down. So as soon as our levels started getting too exciting, too much adventure, we had to pull back on that. That was the challenge, and we went around that a number of times. Sometimes we had to pull back on how much gameplay. But all the time, we were also very passionate about building a really accurate LEGO simulation. That's something that excited us. And we always from the very beginning saw that that could go way beyond the Chamber of Secrets product. And it did go way beyond over time.

Brian Crecente

As Qube walked the fine line between too much and not enough gameplay, they were in deep talks with the LEGO Group about the building side of the game and the engineering going into recreating that experience.

Servan Keondjian

Being quite engineering centric, I was very much about building the right infrastructure first. And I wanted to use the LEGO Creator window as a way of getting it and putting the right pieces in place because I knew that's often why technology has a limit to where it can go. It's often because people don't take the time or don't have the budget to put in the foundations in the way you'd really like to so you can build big enough on top of it. So for me, I was very much into the fundamentals of getting a file format first that was something that could be used for all types of LEGO bricks, right across the spectrum of everything they had. File format, and then a connectivity module, which was basically what we call the

LEGO SDK at that time. The LEGO SDK's job was to build a file format and a software module that could load and save to that file format, and also handle all the connectivity of various groups of LEGO elements. It was super compact, what we had. It didn't store all the geometry of the bricks. Well, it had library, but the things like the studs were rendered later so they could be a level-of-detailed with distance. So, you know, it was really important, for instance, we could write the LEGO logo on the studs that was fully detailed. If you zoomed in, you would see it all in 3D relief. But as you zoomed out, you didn't need to see it. So it didn't need to be stored in the file. All you needed to know is where the stud was.

(tune break)

Ethan Vincent

Servan said the other fundamental challenges the engineers at Qube took on, were figuring out how to mimic the famous clutch of a LEGO brick in digital form, and building out a user-interface that everyone could use.

Servan Keondjian

That was what was really exciting for us as a group to take that on and build that. And we also did work, I think the LEGO Group had a R&D group within LEGO Group, and they had done some initial work on the spacings for the LEGO grid and how they wanted that to work. And they they did hand us some useful fundamental basics that we built it on top of and made sure we followed that. And we built our connectivity simulation on top of that. We'll just have it's super, super slick and easy to use. And really, this Creator was a prototype, was our learning experience and seeing how far we could push that. And we knew we were going to take it further as we went, so like I said, it's all about the foundations, and then coming up with enough of a UI that used the whole 2D position of the mouse and intelligently would extrapolate that into the 3D space, know where the brick you are dragging would go and snap and stick using the connectivity. The other part, obviously, the connectivity model had to be evaluated super fast so that you could drag the brick around and you knew exactly where it was snapping and clicking, and not jump all over the place. It had to do the right thing. You know, those were the iterations we built early on to prove out we could do this.

Brian Crecente

Servan said the team felt an immense sense of pressure to get something done quickly that the LEGO Group believed in.

Servan Keondjian

You know, you feel confident you can do it, but you've also got this really short amount of time at the beginning when you actually have to build most of the thing. And sometimes you have to rush some bits, but you've got to make really intelligent decisions that you

don't rush some really important bits. But you've also got to get something provable quickly, both for yourself and for your customer. So yeah, that's, you know, it was hairy at the beginning, because we had to get that SDK standing and working and connecting bricks. I do remember when we've got the first things actually building it was very exciting, and rendering, because rendering, like I said, rendering the detail on LEGO bricks in those days was really a challenge because with all the studs, with all the rounding and all the detail on the studs, especially if you're going to render the LEGO relief logo without texture maps, it's a lot of geometry. So it was both the rendering performance and the connectivity that we were rushing to get working in our first prototype. I don't remember the dates, but we got it there and we kept building on it. Then the setbacks were more around how much gameplay we put in. We put in too much gameplay to begin with. And we had to pull it out. We had to rebuild a lot of our original levels.

(Tune break)

Ethan Vincent

Qube managed to nail the game and get Creator: Harry Potter and the Chamber of Secrets out the door in 2002. It marked the last LEGO Creator title ever released, but not because it wasn't well received. If anything, it was because it did too good a job at recreating the experience of building with LEGO bricks in a digital setting.

Chapter 4: LEGO Digital Designer – 24:13

Brian Crecente

While Qube was diligently working away on the last LEGO Creator game, there was movement afoot inside the LEGO Group to take the technology powering that game and turn it into something much more important to the core of the LEGO Group, a tool that could be used by fans and employees alike, a creation that would harken back to the days of SPU Darwin, and that initial idea of turning the full LEGO brick library into digital form for all to use however they wanted. Servan said what would eventually become LEGO Digital Designer started its life as an idea within the LEGO Group and the skilled handiwork of Qube on Creator: Harry Potter and the Chamber of Secrets.

Servan Keondjian

In a way, I'd say it was a sort of skunkworks within the LEGO Group. Certain people in management at the LEGO Group knew that we had the potential to build a really good building tool, and they believed in us. But they also felt other people within the LEGO Group didn't believe that was possible because of the work they'd done before and they hadn't achieved it. So they were on our side, and they knew that we had a chance to prove ourselves with the Creator project, and they said, "Go for it, see how good you can do it,"

and we wanted to run with that. So it was once LEGO Creator was done, I was very keen to build a pure prototype for LEGO Digital Designer.

(Tune break)

Ethan Vincent

Ronny Scherer was among the people who looked at the latest Creator game and saw something much bigger and important. Ronny started at the LEGO Group on May 1, 2002, and one of his first projects was LEGO Digital Designer. But at that time, it was called Project Arena. Now another fun aside or fun fact – and many of you loyal listeners will know this – Ronny is actually the executive producer of this podcast. So it's fair to say he's a fan of the LEGO Group's history and learning from past successes and missteps. Creator: Harry Potter and the Chamber of Secrets was in the late stage of development when Ronny came aboard.

Ronny Scherer

I remember visiting Qube Software very quickly after I joined the company and sort of spent some time with them, and the producer was working on the LEGO Group part of the Chamber of Secrets on the LEGO Group side, and sort of starting to evaluate that as a potential platform for creating what eventually became LEGO Digital Designer. So it was called Project Arena in the early days. Project Arena was something that I helped set up. It wasn't existing yet. But it was more looking at some of the amazing technology and design that a female colleague of ours called Olga Timcenko had designed around the connectivity of LEGO bricks and how that could be represented in digital form. Some of the technical work on how to represent LEGO models in a compact file format that a guy called René Schalburg had been working on, and obviously, my immediate manager at the time who hired me, a guy called Anders Thorbjørn Jensen. They were all kind of hovering around this idea that, how can we allow kids to create virtual LEGO models and share them across the internet? And as we talked about previously, a lot of those seeds were planted in the Darwin era. And as the internet – or the web, as we know it today – evolved, it started to open up onto opportunities for, you know, supporting, encouraging a community of creators, you know, documenting their LEGO creations and sharing them with people across the world. So this is obviously in the era of web 1.0, where it's largely sort of one-way communication with static pages and sort of just on the cusp of what's been largely referred to as web 2.0 where Google, social media, the Facebooks like the two-way communication of, you know, engaging with communities online is really starting to take off in a big way.

Brian Crecente

The LEGO Group looked at a number of ideas for how it could bring this concept to life. Among them was going to Qube to see if they could essentially extract the building component of the game they just created and use that to create a powerful tool.

Ronny Scherer

I recall the Qube Software team as super capable, and they earned a lot of trust very quickly from me personally, because they seemed to have the grasp on, you know, the things that we thought was important in terms of executing a building experience in 3D. Again, 3D was still not as accessible as it is today, they were still like – most computers would not come with a discrete graphics card. So there was, you know, all these kinds of limitations, and I seem to recall at the time that we wanted to make sure that we partnered up with someone who understood how to navigate that, within those constraints that. You know, we wanted the LEGO brand to look as great as possible, meaning, you know, the rendering of the bricks and the minifigures and everything like that. We wanted that to be as high fidelity as we could. There was all kinds of limitations around, for example, the studs on the LEGO bricks. And as you sort of multiply, you know, the number of bricks in a model or a scene, you easily get into a very, very large number of polygons. And I remember one of the examples that Olga loved to use as a point of reference was like a Technic beam. I don't know if that makes sense to you, but it's like a regular one-by-X brick, but it's got holes in it. So it's got like circular holes. So it's got both studs on top, tubes at the button and holes through it. And one of these beams, I think it was like a one-by-ten, consisted – one brick consists of more polygons than a character in World of Warcraft. And obviously, we wanted like at least hundreds – and ideally thousands – of bricks in a model. And so trying to solve for that at that stage was a pretty interesting challenge. And that's where I feel that the Qube Software team were very convincing. Like, I remember Servan and Peter Acker, and all of the people on that team, just sort of showed some really impressive demos and a path forward for how we could resolve that.

(Tune break)

Ethan Vincent

Because Project Arena was built on the bones of the latest LEGO Creator, Servan said it didn't take long to create that first working prototype, which he envisioned would turn into a tool not just for crafting LEGO brick creations but LEGO video games.

Servan Keondjian

I knew I could turn around fast and turn it into an even more sophisticated CAD tool, but one that was really easy to model. I think we got the first demo going in three or four months and showed Ronny, and he was able to run with that. We wanted to really get the modeling right, but the reason I called it LEGO Arena was that I wanted to have it as a foundation to build games and other things on top of, and because we had the LEGO SDK, we saw that maybe it could become a module that plug into lots of games, and that's how we'd use it within the Creator game itself. We had the LEGO SDK, we had a UI component on top of it, and we built the gameplay on top of that. So, LEGO Arena was – the concept was to open it up even more, get the UI really good so that you could really edit your models, but then it could potentially be a game maker. So you can build games, but it

would have been a little bit like a sort of Minecraft™-esque sort of world creator. After the first two or three milestones, Ronny came back, and we did the renaming, and he tweaked the design. We minimized it because there was only a certain budget that we had to work with. We had to fit it within that budget. We really minimized it to be the very first pure build tool. It was very easy to use. And then that went out, and I think it was successful, and then we started iterating on that. And then we had the Build Instructions version, we built in Build Instructions, and then we started building in more and more online connectivity.

Brian Crecente

The original version of LEGO Digital Designer hit in 2004, and shortly thereafter, the LEGO Group rolled out support allowing people using LDD to order physical versions of their models under the LEGO Factory and Lego Design byME programs. A few years after releasing LEGO Digital Designer, Qube pitched the idea of turning the LDD tool back into a LEGO video game, Servan said.

Servan Keondjian

We put together a pitch where users could build their own tile of LEGO brick. Everyone had their own sub base plate and all the tiles could connect into an online world, and every day, or every day that you logged in, a certain budget of bricks would sort of sprinkle down on everyone's tiles, and you would get those bricks to build with, and people could add more and more to their world and travel through the world. But it was an original, an early design for what came later, I think. But it didn't go forward. I think the LEGO Group wanted to work with other companies. We iterated it a few times, the pitch, but in the end, it didn't go forward.

Ethan Vincent

Not only did the LEGO Group pass on the idea, but it also decided to take LDD from Qube and continue its development internally. Servan said he thinks the decision was fueled by a desire to have total control over a project that was becoming an important part of the company's core efforts in the realm of digital creations.

Servan Keondjian

It was a bit of a shock. I was a little naive, but we were excited developers. We were just very excited to be working on any of this. And I didn't understand. I'd had some experience – I used to work for Microsoft, I worked on DirectX – and I'd had some experience with how bigger companies operate. But one of the reasons we could do things fast was we were a small company and a tightknit bunch of developers that would just get excited about something and build it. So it was a bit of a shock. We were very into the project. We were sad that it moved on, for sure. We were very excited to keep building – I was very excited to keep building that and improve it. We had some really great ideas for it. And I think we were really ahead of the curve.

(Melancholy tune plays)

Servan Keondjian

I think we proved that you really could build with LEGO bricks as a tool. And that was the goal we set out to achieve, and I think we did that. We got enough with LEGO Creator and then LEGO Digital Designer after that, really ran with it, that showed that, yeah, you can build with this and you can make a foundation for building and creating worlds.

Brian Crecente

For the third time in its history, the sandbox Creator Software was scrapped, and the new team, once more an internal team at the LEGO Group, started from scratch, completely rebuilding LEGO Digital Designer. Since its creation, LEGO Digital Designer has branched off in many interesting directions. Of course, there was the ability to create a digital model and then have physical version ship to yourself. But shortly after its release, LDD was being used by the LEGO Group's own designers to sort of sketch out ideas made of LEGO bricks. Game developers use the tool to help with their design work and creation pipeline. A version of the software was given to the team behind the LEGO Movie, which used it to rough out their LEGO brick builds. And fans continue to use it, both to create their own real world models, but also to export to fan-created video games.

Chapter 5: Conclusion – 36:44

Ethan Vincent

From its inception back in 1996 until today, LEGO Creator and what it inspired remains one of the longest-lived, most important games in the LEGO Group's more than 25-year history in video games.

Ronny Scherer

It has been a very key milestone to sort of illustrate that play loop of creating and playing and sharing.

Ethan Vincent

This is Ronny Scherer speaking.

Ronny Scherer

That's sort has been ingrained in a lot of the efforts that we are working on until this day, basically. Very early on, it became sort of that, what is the digital system of play where, you know, anything you can create can be used anywhere? And when you think about it, a lot of the conversations about, you know, the metaverse these days and what, you know, Epic Games and Roblox and Minecraft are sort of trying to achieve, is a little bit that you sort of have this endless box of virtual stuff that you can put together in interesting ways,

across many different platforms and devices, and so as nerdy and non-derogatory as that can sound, that was really the core of it. And, you know, that that was why things that came out of that, and that still exists to this day, was, you know, a file format that was able to represent the LEGO system within a very small footprint, so it was easy to transfer over modems at the time before broadband. So although the franchise itself doesn't, you know, there hasn't been any specific releases, you could argue a lot of what LEGO Worlds became, and other games as well, have obviously had a nod to what Creator started, including LDD. Even though the playing part of it was deprioritized, but it produces virtual LEGO models that we're using in games, we're using in the LEGO Movie, we're using it in many different contexts that are, you could say, are more sort of in a professional setting, but still enabled by this universal idea of, you know, of course a virtual LEGO model should be reusable across many different applications and contexts.

(Tune break)

Brian Crecente

Rob Smith, who had that rough idea for a digital, LEGO brick creation tool all of those years ago, said the game's long life and deep impact remains a point of pride for him.

Rob Smith

It's funny, I've bored friends, and family, and work colleagues with this story for a long time. I mean, there's an immense amount of pride, not just in the end product, but also working with an incredible team of developers, non-traditional game developers, that created something that actually had much longer legs than the many, many games around that time, or even nowadays, and for us to have had the – broken the technical barriers for that game, as well as the interface, to commercially release in a very quick period of time from a development perspective, to have the support of – and again, a very significant amount of money was spent from a marketing perspective because this was a pillar title at the time. I'd never worked on a game then, up to that point, that had had TV advertising, which in the late '90s was huge, I mean, incredibly expensive. I remember taking a video cassette to Superscape that had the TV commercial. And we went into a conference room and I showed that TV ad probably 10 times to the dev team.

(Commercial for LEGO Creator: Knights' Kingdom

Narrator

Once upon a time there was a castle. (sound of explosion) And then there wasn't. Now you can make history your way in LEGO Creator: Knights' Kingdom by recreating exciting adventures on PC CD-ROM.)

Rob Smith

Everyone was just completely blown away. And it was at that point, I think, everyone realized that we'd actually done something that hadn't been done before.

(Commercial continues.

Narrator

New LEGO Creator: Knights' Kingdom. Rated E for everyone. Making history on PC CD-ROM.)

Rob Smith

I don't think anybody would ever had that thought, or would have had that arrogance to think it would have had that kind of an impact on the business. I mean, that's an amazing thought. I often think of things like Minecraft, and I do wonder whether Minecraft may have been inspired by some of that work as well. But no, you could never have imagined it would have had that kind of an impact. I just love the idea of being able to do what I wanted to do as a kid, which was build, play without the consequences of smashing my LEGO bricks to pieces and then having to rebuild it. I think most great ideas are simple. And it was very heartfelt. I wanted to do something that I wanted to play, that I knew, I think, younger kids would have really enjoyed to have done. And I remember, there was a big children's event called the Big Bash in Birmingham in the U.K. And that was probably the first times we showed LEGO Creations and the range of launch titles publicly. And the LEGO LMI booth there was just rammed with people. It was so bad we, in the end, we had to put time limits on amount of time that people could play the games for because they were dominating the PC stations. But more importantly, you could see parents stood in the background waiting for 20 minutes, 30 minutes for their children to get bored, and they never did. We had to politely ask the children to let other children have a go and, you know, the reaction there – I think the reaction, it sounds really trite and, but it's not. The reaction for the target market – younger kids – was incredibly gratifying. The hard work, we put in a huge number of hours. That was incredibly gratifying just to – to sort of really justify the work, and actually authorize and approve the work that we'd done, that it actually made sense and it was enjoyable. The premise of what we designed actually worked and it resonated, and that had huge meaning, but never in a million years would I have thought that it would have had the longer term implications that it's had.

(Postscript music)

Bits N' Bricks: Credits – 43:08

Ethan Vincent

Bits N' Bricks is made possible by LEGO Games. Your hosts are Brian Crecente and Ethan Vincent. Producing by Dave Tach. Our executive producer is Ronny Scherer. Creative direction and editing by Ethan Vincent. Research and writing by Brian Crecente. Art Direction by Nannan Li. Graphics and animations by Manuel Lindinger and Andreas Holzinger. Mixing and sound design by Dan Carlisle. Disclaimer voice is Ben Unguren. Opening's child voice is Milo Vincent. Music by Peter Priemer, foundermusic.com, and excerpts from the LEGO Creator video games. We'd like to thank our participants: Servan

Keondjian, Ronny Scherer, and Rob Smith. We'd also like to thank the entire LEGO Games team. For questions and comments write us at bitsnbricks@LEGO.com. That's bits, the letter N, then bricks@LEGO.com. And as always, stay tuned for more episodes of Bits N' Bricks.